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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/039,679	01/04/2002	Stephen Leslie Buchwalter	EN9-98-117-US2	9725
30449	7590	03/23/2004	EXAMINER	
SCHMEISER, OLSEN + WATTS SUITE 201 3 LEAR JET LATHAM, NY 12033			BROCK II, PAUL E	
			ART UNIT	PAPER NUMBER
			2815	

DATE MAILED: 03/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

8m

<b>Office Action Summary</b>	<b>Application No.</b> 10/039,679	<b>Applicant(s)</b> BUCHWALTER ET AL.	
	<b>Examiner</b> Paul E Brock II	<b>Art Unit</b> 2815	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 February 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 10-17, 20-23, 25, 27-29 and 33-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10, 12-17, 20-23, 25, 27-29 and 33-35 is/are allowed.
- 6) ☒ Claim(s) 11 and 36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some    c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hoffman et al. (USPAT 5578869, Hoffman) in view of Crane et al. (USPAT 4888449, Crane).

With regard to claim 11, Hoffman discloses in figure 1, figure 2, and column 4, lines 18 - 65 a method for forming an electronic structure. Hoffman discloses in figure 1, figure 2, and column 4, lines 23 - 31 providing a metallic plate (22) such that all exterior surfaces of the metallic plated are exposed to an ambient atmosphere. Hoffman discloses in figure 1, figure 2, and column 4, lines 40 - 56 forming a mineral layer (24) on the metallic plate. Hoffman discloses in figure 3, and column 6, lines 3 - 6 forming an polymer adhesion layer (54) on the mineral layer. Hoffman does not teach forming an adhesion promoter layer on the mineral layer before forming the adhesion layer. Crane teaches in column 7, lines 51 - 59 forming an adhesion promoter layer on a mineral layer (43) after a step of forming a mineral layer is performed. It would have been obvious to one of ordinary skill in the art at the time of the present invention to use the adhesion promoter layer of Crane in the method of Hoffman in order to improve adhesion of the inorganic mineral layer to the adhesion layer as stated column 7, lines 51 - 59 of Crane. Hoffman discloses in column 4, lines 40 - 56 wherein forming the mineral layer includes forming

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the mineral layer having a mineral selected from the group consisting of silicon carbide (the only carbide mentioned in Hoffman is a silicon carbide see column 4, lines 41 and 55 - 56).

3. Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hoffman, Crane, and Kozono (USPAT 5619070).

With regard to claim 36, Hoffman discloses in figure 1, figure 2, and column 4, lines 18 - 65 a method for forming an electronic structure. Hoffman discloses in figure 1, figure 2, and column 4, lines 23 - 31 providing a metallic plate (22) such that all exterior surfaces of the metallic plated are exposed to an ambient atmosphere. Hoffman discloses in figure 1, figure 2, and column 4, lines 40 - 56 forming a mineral layer (24) on the metallic plate after the step of providing a metallic plate is performed. Hoffman discloses in figure 3, and column 6, lines 3 - 6 forming an polymer adhesion layer (54) on the mineral layer. Hoffman does not teach forming an adhesion promoter layer on the mineral layer before forming the adhesion layer. Crane teaches in column 7, lines 51 - 59 forming an adhesion promoter layer on a mineral layer (43) after a step of forming a mineral layer is performed. It would have been obvious to one of ordinary skill in the art at the time of the present invention to use the adhesion promoter layer of Crane in the method of Hoffman in order to improve adhesion of the inorganic mineral layer to the adhesion layer as stated column 7, lines 51 - 59 of Crane. Hoffman discloses in figure 3 providing a semiconductor chip (10). Hoffman discloses in figure 3 and column 6, lines 3 - 6 providing an adhesive material (54). Hoffman discloses in figure 3 providing an chip carrier (42). Hoffman teaches in figure 3 coupling the semiconductor chip to the chip carrier. Hoffman, in figure 3 and column 6, lines 3 - 6, in combination with Crane, in figure 1 and column 3, lines 17 - 18, teaches

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coupling the metallic plate to the electronic carrier by interfacing the adhesive material between the adhesion promoter layer and the electronic carrier. Hoffman and Crane do not teach coupling the metallic plat to the semiconductor chip by interfacing the adhesive material between the adhesion promoter layer and the semiconductor chip. Kozono discloses in figures 2a and 2b coupling a metallic plate (13) to an semiconductor chip (11) by interfacing an adhesive material (12) between the metallic plate and the semiconductor chip. It would have been obvious to one of ordinary skill in the art at the time of the present invention to use the adhesive material between the metallic plate and the semiconductor chip of Kozono in the method of Hoffman and Crane in order to protect the semiconductor chip from foreign particles that cause shorts. It would have been further obvious in the method of Hoffman, Crane, and Kozono that the adhesive material would be between the adhesion promoter layer and the semiconductor chip.

***Allowable Subject Matter***

4. Claims 10, 12 - 17, 20- 23, 25, 27 - 29, and 33 - 35 are allowed.

5. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record does not disclose or suggest either singularly or in combination at least the claim limitations of “forming a first portion of the mineral layer on a first surface of the metallic plate and forming a second portion of the mineral layer on a second surface of the metallic plate, wherein the first surface of the metallic plat is about perpendicular to the second surface of the metallic plate; and forming an adhesion promoter layer on a mineral layer after a step of forming a mineral layer is performed, including forming a first portion of the adhesion

promoter layer on a first portion of the mineral layer and forming a second portion of the adhesion promoter layer on the second portion of the mineral layer.”

### ***Response to Arguments***

6. Applicant's arguments filed February 3, 2004 have been fully considered but they are not persuasive.

7. With regard to applicant's argument that “Hoffman does not disclose that the non-conductive layer 24 may include silicon carbide,” it should be noted that the only carbide mentioned in Hoffman is silicon carbide (see column 4, lines 41 and 55 - 56). Hoffman's mention of “carbide” in column 4, lines 55 - 56 must include “silicon carbide” because “silicon carbide” is the only carbide mentioned by Hoffman in the entire disclosure. Therefore, applicant's arguments are not persuasive, and the rejection is proper.

### ***Conclusion***

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after

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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul E Brock II whose telephone number is (571) 272-2723. The examiner can normally be reached on 8:30 AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on (571) 272-1164. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

Paul E Brock II  
March 11, 2004



Tom Thomas

